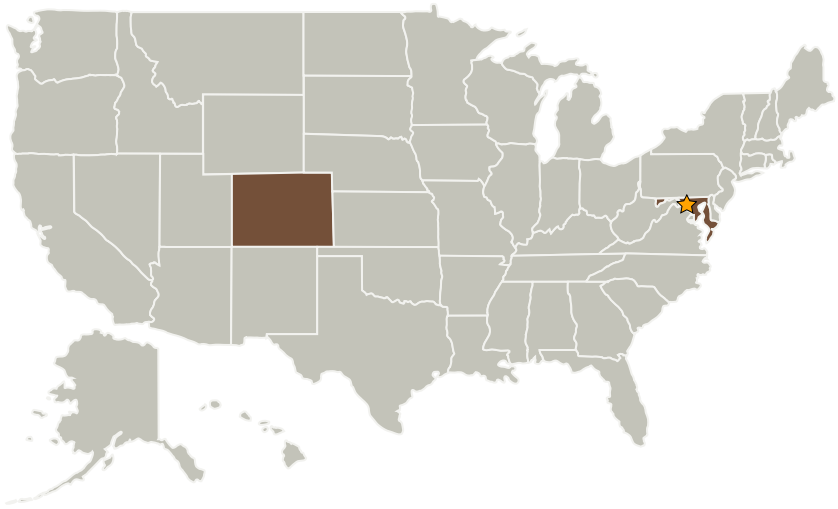
Stratospheric Deployment Parafoil, Phase I

Completed Technology Project (2007 - 2007)

Project Introduction

The Stratospheric Deployment Parafoil is a proposed technology that will be designed and tested to provide a greatly superior parachute precision delivery system under thin atmosphere conditions, including Mars entry. Current systems incorporate a parachute which lacks the controllability necessary for precision landing. The non-controllable parachutes act only as a delivery system but afford no way to direct the parachute descent. The new technology will eliminate the uncontrollable system and, rather than using a round parachute variant, will have a high L/D parafoil capable of precision control and landing. This controllable parafoil will have a multistage deployment sequence which will accomplish high speed, even supersonic parachute deployment with the parachute in a reefed condition. The first stage of the deployment will approximate a conical ribbon parachute which will slow the system to subsonic speeds. Once the system has slowed sufficiently, subsequent stages of the deployment will transition the non-controllable parachute to a fully controllable, precision-landing parafoil.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Pioneer Astronautics	Supporting Organization	Industry Historically Underutilized Business Zones (HUBZones)	Lakewood, Colorado

Primary U.S. Work Locations	
Colorado	Maryland

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX09 Entry, Descent, and Landing
  - TX09.2 Descent
    - TX09.2.1 Aerodynamic Decelerators